

REMARKS

I. Formalities

The due date for responding to the Office Action mailed on October 27, 2006 was January 27, 2007. Because January 27, 2007 fell on a Saturday, the submission of this Amendment on January 29, 2007 is considered timely, and no extension fees are required.

Applicants thank the Examiner for initialing the references listed on form PTO/SB/08 submitted with the Information Disclosure Statement filed on December 30, 2004. In addition, Applicants thank the Examiner for rejoining claims 12 and 19.

The Examiner has not indicated acceptance of the drawings filed on August 16, 2004. Therefore, Applicants request that the Examiner indicate acceptance of the drawings in the next Office Action.

II. Status of the Application

By the present Amendment, Applicants amend claims 11, 12, and 16. Further, Applicants add new claims 22 and 23. No new matter is added.

Claims 1-23 are all the claims pending in the application. Claims 1-9, 14, 18, and 21 have been withdrawn from consideration. Claims 10-13, 15-17, and 19-20 have been rejected. The present Amendment addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

III. Claim Rejections Under 35 U.S.C. § 101

Claims 10-13, 15-17, and 19-20 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicants respectfully traverse this rejection.

The grounds of rejection state that the claims are directed to a judicial exemption, and therefore must have either a physical transformation or a useful, concrete, and tangible result. Further, the grounds of rejection state that the claims fail to include a physical transformation, and that although the claims are useful and concrete, there is no tangible result claimed. In particular, the grounds of rejection state that determining a distortion error is insufficient to constitute a tangible result, because this has not been used in a disclosed practical application, or made available so that its usefulness in a disclosed practical application can be realized. Applicants respectfully disagree.

First, Applicants disagree with the assertion that claims 10-13, 15-17, and 19-20 are directed to a judicial exemption. The Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106) state that “any new and useful process, machine, manufacture or composition of matter under the sun that is made by man is the proper subject matter of a patent.” The Guidelines note that the courts have developed three exceptions to these statutory categories of patentable subject matter. These exceptions are limited to abstract ideas, laws of nature, and natural phenomena. Applicants submit that measuring a distortion error of an optical system, as recited in claims 10-13, 15-17, and 19-20, is not an abstract idea, law of nature, or natural phenomenon. Instead, these measurements are a new and useful process, in which the distortion error of an optical system is determined. Therefore, claims 10-13, 15-17, and 19-20 are directed to statutory subject matter under 35 U.S.C. § 101.

Second, even if claims 10-13, 15-17, and 19-20 fall within a judicial exemption, they would be directed to a practical application of a judicial exemption, and therefore would constitute patentable subject matter under 35 U.S.C. § 101. As noted in the grounds of rejection,

if a claimed invention falls within a judicial exemption, it is nonetheless directed to statutory subject matter if it is directed to a practical application. In particular, a claimed invention is directed to a practical application if it transforms an article or physical object to a different state or thing, or otherwise produces a useful, concrete, and tangible result. The grounds of rejection acknowledge that the claims produce a useful and concrete result, but maintain that they do not produce a tangible result. However, the Guidelines state that the tangible result requirement only requires that a “process claim must set forth a practical application of that judicial exception to produce a real-world result.” The Guidelines further state that a patent is granted for “the discovery or invention of some practical method or means of producing a beneficial result or effect.” As discussed above, it is well known to a person of ordinary skill in the art that it is a practical and tangible result to determine the distortion error in any optical system. In particular, one important practical application of determining the distortion error of an optical system is the high accuracy measurement of the imaging behavior of projection objectives in microlithography projection exposure machines (Specification, ¶ [002]). Therefore, claims 10-13, 15-17, and 19-20 produce a useful, concrete, and tangible result, and are directed to statutory subject matter under 35 U.S.C. § 101. Applicants respectfully request that the Examiner withdraw the rejection of these claims.

IV. Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 11, 12, and 16 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Accordingly, Applicants have amended claims 11, 12, and 16. Applicants respectfully request that the Examiner withdraw the rejection of these claims.

V. Claim Rejections Under 35 U.S.C. § 103(a)

Claims 10-12 stand rejected as allegedly being unpatentable under 35 U.S.C. § 103(a) over U.S. Patent Application No. 2004/0114150 to Wegmann et al. (hereinafter “Wegmann”). Applicants respectfully traverse this rejection on the ground that Wegmann is not prior art to the current application. Wegmann was published on June 17, 2004, which is after the current application was filed on January 29, 2004. Thus, Wegmann, at best, would only be available as prior art under 35 U.S.C. § 103 based on 35 U.S.C. § 102(e). Under 35 U.S.C. § 103(c), Applicants may make a showing of common ownership to overcome a rejection under §103(a), if the reference is only available as a reference under § 102(e), (f) or (g).

The undersigned hereby represents that Wegmann and the claimed invention of the present application were, at the time the invention of the present application was made, owned or subject to an obligation of assignment to Carl Zeiss SMT AG. Copies of the cover pages of Wegmann and the Recordation of Assignment for the present application are enclosed as evidence thereof.

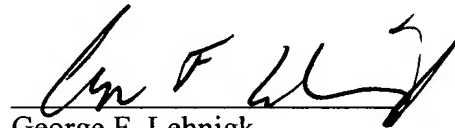
In view of the above, it is respectfully submitted that Wegmann is not available as prior art under 35 U.S.C. § 103, and it is requested that the rejection based on Wegmann be reconsidered and withdrawn.

VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



George F. Lehnigk
Registration No. 36,359

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 29, 2007



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

FEBRUARY 14, 2005

PTAS



102817019A

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 08/16/2004

REEL/FRAME: 015680/0981
NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

HAIDNER, HELMUT

DOC DATE: 04/20/2004 ✓

ASSIGNOR:

GOEPPERT, MARKUS

DOC DATE: 04/20/2004 ✓

ASSIGNOR:

SCHRIEVER, MARTIN

DOC DATE: 04/20/2004 ✓

ASSIGNOR:

WEGMANN, ULRICH

DOC DATE: 04/14/2004 ✓

ASSIGNEE:

CARL ZEISS SMT AG ✓

CARL-ZEISS-STRASSE 22 ✓

73447 OBERKOCHEN, FED REP GERMANY ✓



US 20040114150A1

(19) **United States**(12) **Patent Application Publication**
Wegmann et al.(10) Pub. No.: **US 2004/0114150 A1**(43) Pub. Date: **Jun. 17, 2004**(54) **METHOD AND APPARATUS FOR
DETERMINING THE INFLUENCING OF
THE STATE OF POLARIZATION BY AN
OPTICAL SYSTEM; AND AN ANALYSER**

Jan. 31, 2003 (DE)..... 103 04 822.7

Publication Classification(51) Int. Cl.⁷ G01B 9/02

(52) U.S. Cl. 356/491; 356/520

(75) Inventors: **Ulrich Wegmann, Koenigsbronn (DE);
Michael Hartl, Munich (DE); Markus
Mengel, Heidenheim (DE); Manfred
Dahl, Lauchheim (DE); Helmut
Haidner, Aalen (DE); Martin
Schriever, Aalen (DE); Michael
Totzeck, Schwaebisch Gmuend (DE)**(57) **ABSTRACT****Correspondence Address:**
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037 (US)

A method and an apparatus for determining the influencing of the state of polarization of optical radiation by an optical system under test, wherein radiation with a defined entrance state of polarization is directed onto the optical system, the exit-side state of polarization is measured, and the influencing of the state of polarization is determined by the optical system with the aid of evaluation of the exit state of polarization with reference to the entrance state of polarization. An analyser arrangement which can be used for this purpose is also disclosed. The method and the apparatus are used, e.g., to determine the influencing of the state of polarization of optical radiation by an optical imaging system of prescribable aperture, the determination being performed in a pupil-resolved fashion.

(73) Assignee: **CARL ZEISS SMT AG**(21) Appl. No.: **10/628,431**(22) Filed: **Jul. 29, 2003**(30) **Foreign Application Priority Data**

Jul. 29, 2002 (DE)..... 102 355 14.2

